ABSTRACT

The present invention provides a highly corrosion-resistant plated steel sheet that can achieve excellent surface smoothness and formability and, according to the process of the present invention, a hot-dip galvanized steel product excellent in surface smoothness and formability having on the steel product surface a zinc alloy plating layer composed of 4 to 22% by mass of Al, 1 to 5% by mass of Mg, 0.000001 to 0.1% by mass of Ti, 0.000001 to 0.5% by mass of Si and the balance of Zn and unavoidable impurities, the plating layer of the plated steel product having a metal structure in which an [Mg_2Si phase], an [Al phase], a [Zn_2Mg phase] and a [Zn phase] are present in a mixture in the matrix of an [Al/Zn/Zn_2Mg ternary eutectic structure], and the plating layer containing a Ti-Al base intermetallic compound in the [Al phase] and/or the [Zn_2Mg phase] and/or the [Zn phase], is produced.